The Heckscher Museum *of* Art

SPECIAL EXHIBITION
RESOURCE GUIDE FOR TEACHERS

To Infinity and Beyond:
Mathematics in Contemporary Art

April 19, 2008 - June 22, 2008

Benjamin Edwards, *Automatic City*, 2006, lithograph, 28 ½ x 50 ¾ in.

The Heckscher Museum *of* Art
2 Prime Avenue
Huntington NY 11743
631.351.3250

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EXHIBITION SUMMARY

To Infinity and Beyond:
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How are art and math related? Much more than you might think! This special exhibition explores how contemporary artists use mathematics as a source of inspiration for their work. The exhibit showcases an international selection of artists working in a variety of media and is organized according to mathematical categories including:

- **Counting**
- **Geometry**
- **Measuring**
- **Fibonacci series and the Golden Section**
- **Linear Perspective**
- **Probability and Statistics**
- **Patterns of Symmetry in Nature and Art**
- **Codes and Games**
- **Infinity**

Artists to be featured include: Max Bill, Mel Bochner, Squeak Carnwath, Rosz Chast, Rupert Deese, Pedro Movellan, Alfred Jensen, Micha Lexier, Sol Lewitt, Anthony McCall, Mario Merz, Manfred Mohr, Sharon Molloy, Francois Morellet, Olivia Parker, Rosamond Purcell, Rick Purdy, James Sanborn, Tom Shannon, Stephen Sollins, Hiroshi Sugimoto, Bernar Venet, Julian Voss-Andreae, Ouattara Watts, Melvin Way,

VOCABULARY WORDS

ABSTRACT ARTWORK – A work of art that is not realistic or representational of a real person, place, or thing. It is about color, shape, and line.

GEOMETRY – From Greek: geo = earth, metria = measure. Branch of mathematics that deals with the measurement, properties, and relationships of points, lines, angles, and two- & three-dimensional figures.

GEOMETRIC SHAPE – A shape that obeys the laws of geometry. Geometric shapes are usually simple, such as triangles, squares, and circles.

SYMMETRY – (Mathematics) the correspondence in size, form, and arrangement of parts on opposite sides of a plane, line or point.

REPETITION – A way of combining elements of art so that the same elements are used over and over again.

PATTERN – The regular repetition of color, shape, line, or some other element within a work of art.

MONOCHROMATIC – A work of art that uses values of only one color.

BOOKS & WEBSITES

BOOKS

- ***ARTHematics Plus: Integrated Projects in Marth, Art, and Beyond*** by Stefanie Mandelbaum & Jacqueline S. Guttman
- ***Fragments of Infinity: A Kaleidoscope of Math and Art*** by Ivars Peterson
- ***Math and the Mona Lisa: The Art and Science of Leonardo da Vinci*** by Bulent Atalay
- ***The Art of Mathematics (Dover Books)*** by Jerry P. King
- ***Numbers: The Universal Language*** by Denis Guedj

WEBSITES

- **http://www.isama.org**
- **http://www.nga.gov/education/classroom/counting_on_art**
- **http://www.mathartfun.com**
- **http://www.georgehart.com/virtual-polyhedra/classroom.html**

PRE-VISIT ART ACTIVITIES

## *Numbers Around Us: Poetry & Art* (Grades 4 - 8)

Look carefully at Charles Demuth's *I Saw the Figure 5 in Gold* (right) and works of art from the exhibition *To Infinity and Beyond: Mathematics in Contemporary Art* that include or relate to numbers.

Motivation: (Adjust as appropriate for grade level.)
What number did Demuth make this painting about? What **colors** did he use? What does it remind you of?

Procedure:

1. Explain that Demuth was inspired by a poem to create this painting. Read the poem *The Great Figure* aloud to the class and/or distribute.
2. Discuss how the poem and painting relate in terms of **subject**, **color**, and **mood**. How did Demuth show that the 5 was moving? How did he show that it was a rainy night?
3. Discuss how numbers are everywhere. Brainstorm as a group different places we see numbers (Ex: phone numbers, addresses, clocks, etc.).
4. Have students choose one number (or group of numbers) that they might see in a specific place or setting. Guide students in writing their own poems about their numbers, including descriptive words and using Williams' poem as a model.
5. Have students create original works of art based on their poems in a media of your choice. Discuss how to show numbers and environment **abstractly** (through use of **color**, **shape**, **line**,
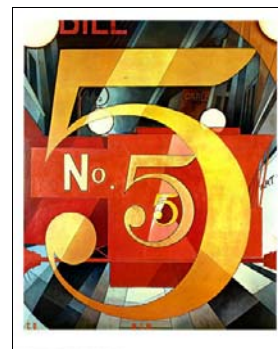
Charles Demuth, *I Saw the Figure 5 in Gold*, 1928, Oil on board.

The Great Figure
by William Carlos Williams

Among the rain and lights
I saw the figure 5
in gold
on a red
fire truck
moving
tense
unheeded
to gong clangs
siren howls
and wheels rumbling
through the dark city

Creative Numbering (Grades 1 - 3)

Erte (Roman de Tirtoff, *The Numeral Suite*, 1980, Serigraph, Mixed Media.
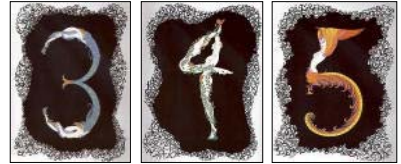
Look carefully at *The Numeral Suite* (right).

Motivation: (Adjust as appropriate.)
What numbers do you see? Numbers are usually made up of **lines**. What are these numbers made up of?

Procedure:
Have students choose their favorite numbers and use their imaginations to create them out of their favorite people, animals, or objects.

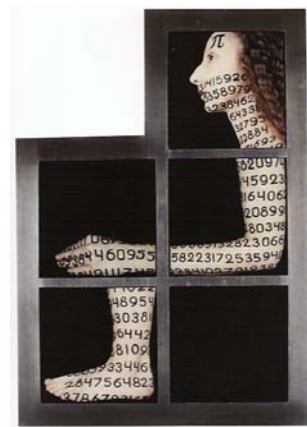# *Numbering Identity* (Grades 9 - 12)

Look carefully at *Pi* (right) from *To Infinity and Beyond: Mathematics in Contemporary Art.*

Motivation: (Adjust as appropriate.)
What is this work of art about? How is it an untraditional **portrait**? Discuss #s and identity. What might the artists be trying to say by writing a number on a person?
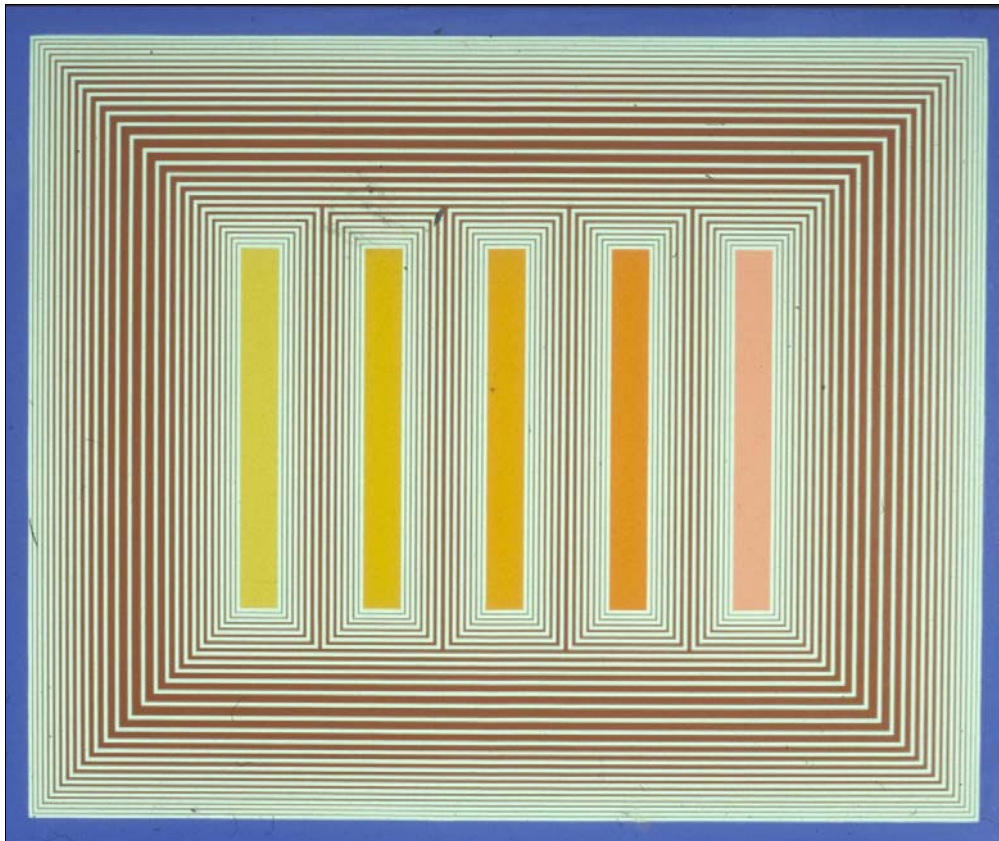
Procedure:
1. Discuss how #s are often used as identifiers (ex: addresses, bank account #s, etc.). More and more, #s are being used to identify PEOPLE in the 21st century. Can a number truly represent a person? Discuss as a class.

Rimma Gerlovina and Valeriy Gerlovin, *Pi*, 1991, c-prints in metal construction, 48 x 36 in.

2. Brainstorm examples of numbers that can be used to identify a person (ex: social security #, telephone #, credit card #, etc.).
3. How do students feel about identifying themselves or having others identify them by #s?
4. Brainstorm numbers that students feel represent them or others use to represent them. Have students create their own self-portraits in media of their choice that use these numbers and express how they feel about it.

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To Infinity and Beyond:
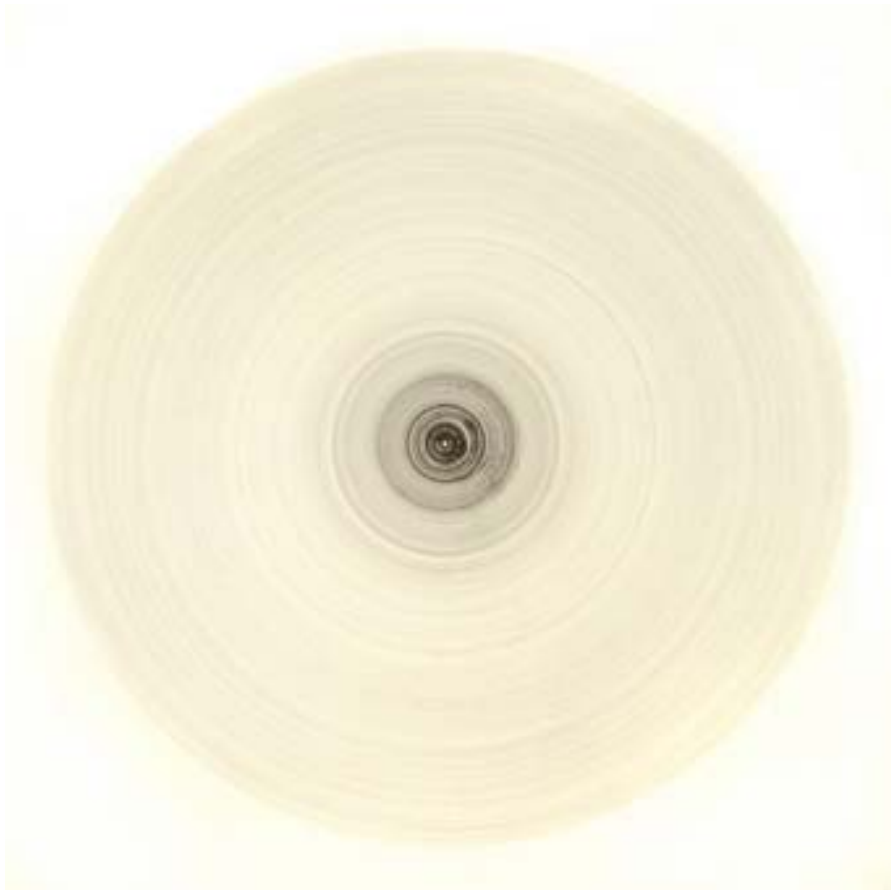## *Mathematics in Contemporary Art*

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Richard Anuszkiewicz, *Temple of Ochre,* 1982, acrylic on canvas, 30 x 36 in., Heckscher Museum of Art.

To Infinity and Beyond:
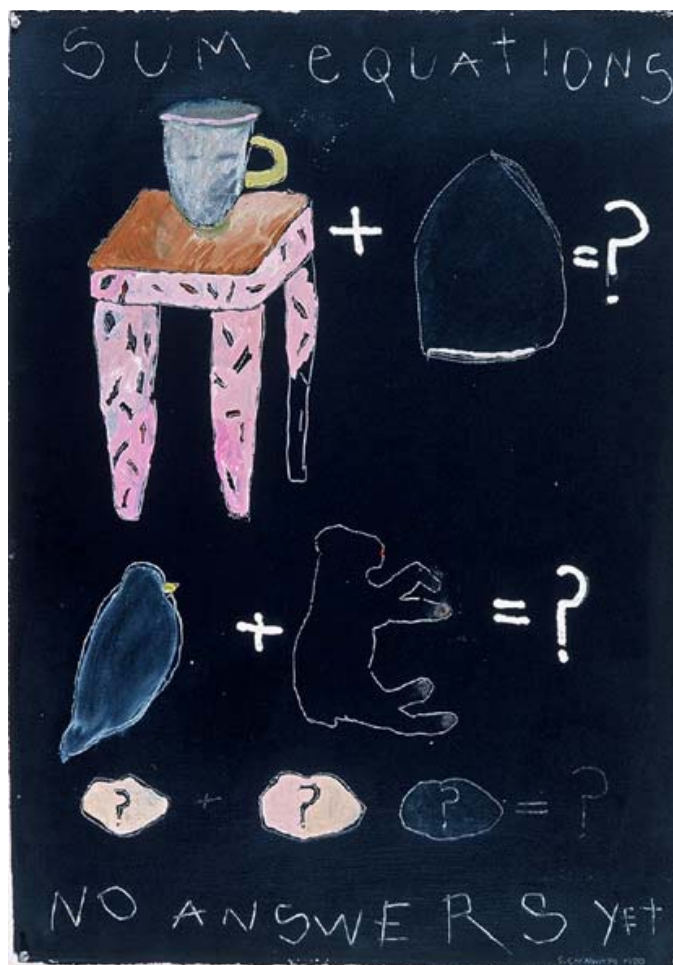## Mathematics in Contemporary Art

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Jill Baroff, *Katrina (Tidal Surge),* 2007, pigmented ink on Japanese gampi mounted on rag, 41.5 x 41.5 in.

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Squeak Carnwath, *Sum Equations,* 1980, oil on primed water color paper, 42 x 30 in. unframed.

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Julian Voss-Andreae, *Cycloviolacin*, 2007, powder-coated steel maquette, 30 x 34 x 24 in.

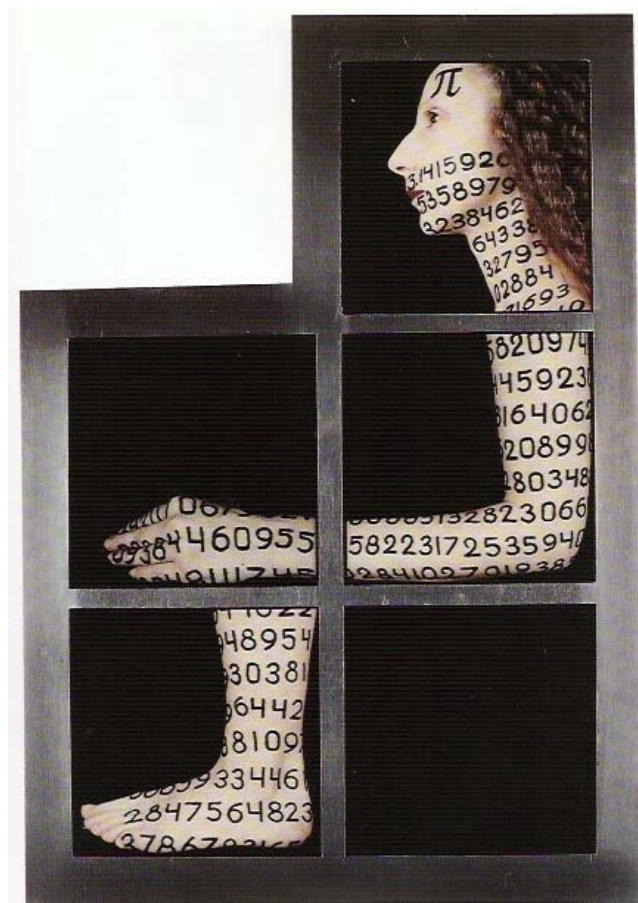# To Infinity and Beyond:
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M.C. Escher, *Waterfall,* 1961, lithograph, 15 x 11.75 in.

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Rimma Gerlovina and Valeriy Gerlovin, *Pi,* 1991, c-prints in metal construction, 48 x 36 in.

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To Infinity and Beyond:
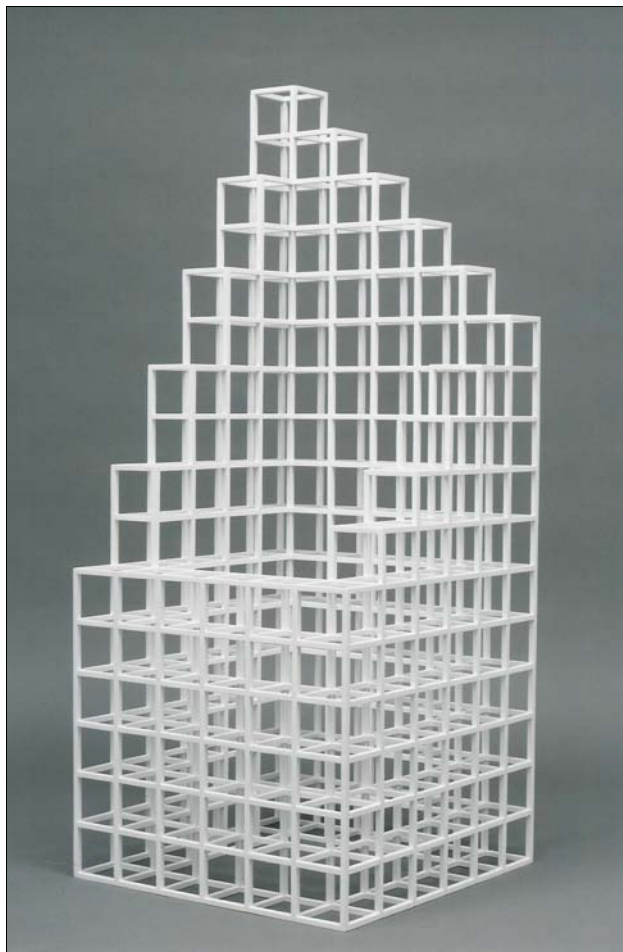## *Mathematics in Contemporary Art*

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Micah Lexier, *Letter-size (flat),* 2001, 8 pieces of aluminum cut into pieces, baked enamel finish, 8.5 x 11 in. each.

To Infinity and Beyond:
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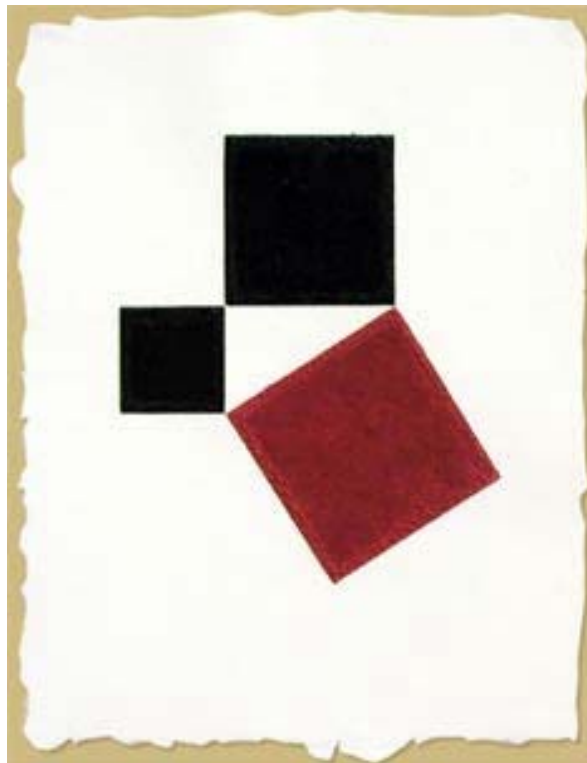**April 19, 2008 - June 22, 2008**

Sol Le Witt, *Square #4,* 2004, wood painted white.

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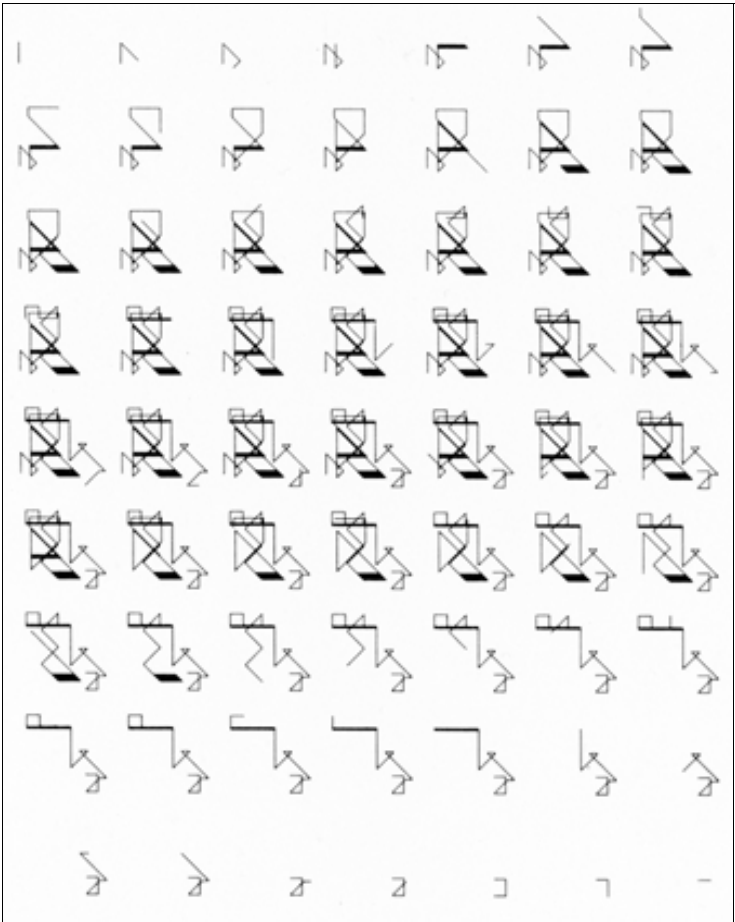## *Mathematics in Contemporary Art*

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Mel Bochner, *Theorem of Pythagoras*, 1997, Wood engraving with embossment, Ed. of 15, 20 x 16 in.

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Manfred Mohr, *P-26 Inversion logique (logical inversion),* 1970, plotter drawings ink on paper, 50 x 45 cm.

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Rosamond Purcell, *Dice,* 2003, c-print, 24 x 20 in.

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Karyl Sisson, *Mixing Bowls,* XXXX, old cloth tape measures, polymer, 1-3/4 in. h x 2 in. d, 2-1/2 in. x 3-1/4 in. d, 3-1/8 in. h x 4-3/8 in. d.

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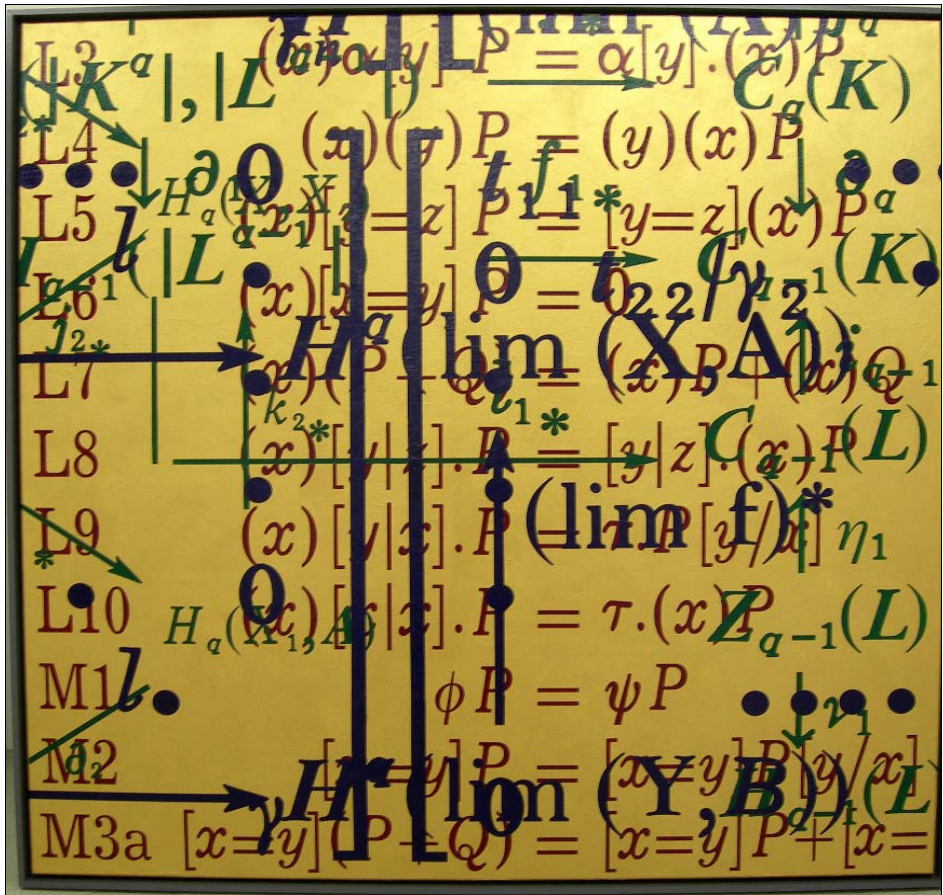## *Mathematics in Contemporary Art*

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Kevin Wixted, *Firenze*, 2004, oil and wax on paper, 60 x 44 in.

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Bernar Venet, *Gold Saturation with lim in the Center*, 2003, acrylic on canvas, 73.5 x 73.5 in.

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Looking Ahead...
Future exhibitions
at the Heckscher Museum of Art

Michal Rovner: Video, Sculpture, Installation
June 28 - September 28, 2008

This exhibition features the video installations of the Israeli-American artist Michal Rovner, projecting teeming masses of little anonymous figures onto the walls of a room or large rocks, appearing to crawl all over the flat planes and craggy surfaces. They give a sense of mass humanity, of a dynamic culture and of man's vulnerability and insignifcance in a large society.

Long Island Moderns:
Artists on the North Shore
from Edward Steichen to Cindy Sherman
October 4, 2008 - January 4, 2009

This exhibition celebrates the rich, yet often overlooked role of Huntington and the north shore of Long Island in American art. For more than a century, Long Island has attracted and inspired innovative artists of the highest caliber who have created groundbreaking works of enduring importance. While the art produced on Long Island's East End has been well documented, the artistic history of Huntington and the North Shore are understood only piecemeal despite the fact that significant artists have worked here. Long Island Moderns will showcase approximately 60 paintings, sculptures, photographs, and drawings, and will be accompanied by a catalogue.

For further information on our upcoming events & exhibitions, please visit our website at **http://www.heckscher.org**

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